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ABSTRACT

A Merrimack Education Center (MEC) project was developed to provide technology consultation, expertise, and advice for capacity building and networking of adult center staff in regional locations in Massachusetts. Two pilot sites were installed to demonstrate the computer/skills center approach of teaching basic skills to adult learners. Six facilitators were established to provide technology assistance to adult educators. A computerized software reviews database was developed as a service to adult educators applying computers in their instructional programs. The software reviews data disk was designed to provide useful information about readily available computer software programs that have potential for use in adult education programs. Related program activities were continued MEC representation on the Adult Literacy and Technology Steering Committee for the Penn State University adult literacy and technology project, work on a partnership project with Digital Equipment Corporation to network and link superintendents through a workstation project, submission of a journal article describing the use of computers as tools in reducing adult literacy, review of MEC's "Computers in Adult Education Planning Guidebook," and dissemination activities through conferences and newsletters. The project made recommendations for consideration by the Massachusetts Department of Education and agencies responsible for adult literacy programs. (YLB)

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ADULT EDUCATION AND TECHNOLOGY

PROJECT REPORT

1987 - 1988

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
Mission and Purpose	1
Goal	2
Program Objectives/Results	2
RELATED PROGRAM ACTIVITIES	12
- National Project (Penn State)	12
- MEC/Digital Project	12
- National Journal Article (T.H.E.)	13
- Apple Corporation	13
- Conferences/Newsletters	14
PROJECT BENEFITS	15
RECOMMENDATIONS	17

APPENDICES

Appendix A - Computer Configuration

Appendix B - Newsletter Article

Appendix C - Agenda

Appendix D - T.H.E. Journal Article

Appendix E - Planning Guide Table of Contents

Appendix F - MEC Capability Statement

INTRODUCTION

Technology has become a vital tool in addressing many of the issues and concerns of adult literacy and its use is expected to increase dramatically in adult education over the next decade. The advantages of using technology are many, and in Massachusetts, the MEC special project operates to help examine these opportunities statewide as new capacity is developed and capability enhanced in the local adult learning center programs. Recognizing the major needs, we have developed this special project and a set of activities that builds capacity in our adult education programs statewide. The MEC adult education project is based on the rationale that training, consultation, technical assistance, and networking enhance the adult education system in the state. This report presents a brief overview of the objectives and activities and recommendations for future activities by the state.

Mission and Purpose

- Technology support facilitates the development of teacher-directed programs at the adult education learning sites through which relevant programs are developed that result in greater options for students.

- Technology supports the mission of adult education by enhancing the instructional functions in adult education centers across the state.

- Information is an increasingly important teaching and management resource. A major purpose of this project is to effect greater access to information through technology for faculty and their students in the adult education field within Massachusetts.

Goal

To provide technology consultation, expertise and advice for capacity building and networking of adult center staff in regional locations statewide.

Objectives

Objective #1: To establish two pilot sites demonstrating the computer/skills center approach of teaching basic skills to adult learners.

This project investigated uses of computers networked for instructional purposes. The purpose of this objective was to build capacity for operating a learning skills center at two pilot sites selected from the adult education center programs. Software selection is based upon identified needs of participants at each individual setting through a skills center. The need for a skills center is significant and utilizes existing capabilities where computer/technology integrates with the adult learning program.

Results

This phase of the project established a sub-committee (see attached) to oversee development of the pilot sites. Two pilot sites were established (Brockton and Mt. Wachusett Community College) based upon recommendations from the regional offices of the Massachusetts Department of Education. Due to some early logistic problems, the sites were not installed until late in the year. Evaluation is being recommended in the two sites to coincide with the implementation period that begins in the fall of 1988.

In Appendix A there is provided a schematic of the network that utilizes Apple computers and incorporates the selection of adult education CAI/CMI software that is loaded on the file server and provides continuous use at the sites.

ADVISORY SUB-COMMITTEE: PILOT PROJECTS

MEMBERS: Bill Arvanitis, Lawrence Adult Learning Center
Linda Braun, Brockton Adult Learning Center
Janice LeClair, Mt. Wachusett Community College
Sandra McLaughlin, Norfolk County House of Correction
Ann Serino, Operation Bootstrap

PURPOSE: To document and disseminate information on technology application practices serving as pilot projects in adult education sites.

OBJECTIVES:

1. Share results from the pilot projects in the utilization of these technology practices.

2. Arrange visitations at the respective sites using this technology for adult educators.

3. Write up, as part of a practice file, information describing the advantages and disadvantages in the use of these technologies at the adult education sites.

PROPOSED ACTIVITIES:

1. Arrange and schedule visitation dates for these applications in the fall of 1988.

2. Disseminate, by mail and through computer networks, practice file information describing each of the projects.

3. Share information from pilot projects through meetings and conferences currently being scheduled.

PRODUCTS/REPORTS:

1. Develop a format for writing up each of the technology application practices.

2. Disseminate information on these practices through meetings, newsletters and conferences, etc.

3. Collect information that would be useful for adult education sites interested in replicating these practices, which are cost data, evaluation information, and the like.

FACILITATORS: Richard Lavin, Merrimack Education Center
George Hanify, Merrimack Education Center

Objective #2: To increase statewide capacity in providing technology assistance to adult educators through a network of facilitators.

This objective is based on establishing regional facilitators that can provide ready assistance to adult educators across the state and, most importantly, at their sites. Using a field agent approach, six facilitators were selected to serve in this capacity representing the six regions of the state (see update newsletter announcement in Appendix B.)

Results

A sub-committee was established (see attached) to assist in the training technical assistance phase of the project. It was the overwhelming view of technology training that, if possible, it be field-based and readily accessible to users. The immediate reaction to this approach from the field was very favorable and the concern was expressed that additional facilitators may be needed (see Recommendations).

- Six technology facilitators contracted to serve regions of the state
- Dissemination of this capacity annually through newsletters, meetings, conferences and communication with regional centers
- Reporting format developed to document field visits and needs
- Training needs assessment being developed for new technologies training
- Plans for additional awareness programs developed

ADVISORY SUB-COMMITTEE: TRAINING AND TECHNICAL ASSISTANCE

MEMBERS: Joan Ford, Boston Technical Center
Russ Hayes, Worcester County House of Correction
Ann Marston, Hampden County House of Correction
Jim McCarthy, Cardinal Cushing Center
Kathleen Stewart, Lawrence Adult Learning Center
Ken Tamarkin, SCALE

PURPOSE: To increase statewide capacity in providing assistance to adult educators in technology applications.

OBJECTIVES:

1. Conduct awareness sessions in two regional centers, east and west, on adult education technology applications.

2. Provide on-site technical assistance to adult education sites as appropriate.

3. Disseminate information on available types of training and technical assistance.

PROPOSED ACTIVITIES:

1. Establish, on a regional basis, six technology field-based consultants on technology.

2. Conduct computer literacy training in two regional centers in the spring of 1988.

3. Conduct two regional center presentations on special applications (i.e., word processing/writing and new technologies videodisc, etc.).

4. Create a mailing announcement with a schedule of training and technical assistance available to adult educators.

5. Conduct training for the six field-based sessions that are scheduled.

PRODUCTS/REPORTS:

1. Develop a syllabus for the training sessions that are scheduled.

2. Conduct a needs assessment format that would be sent to adult educators statewide on their technology application requirements.

3. Develop a contact visitation form that will be used by consultants in their on-site technical assistance.

FACILITATORS: Richard Lavin, Merrimack Education Center
Pauline Kightlinger, Worcester State College

Objective #3: To document and establish databases for the dissemination of software and practices information.

This objective has several activities:

a. To collect and synthesize adult literacy software evaluation reviews describing software in use at adult learning centers.

b. To develop a software/practice form that allows users to describe how software is being utilized and integrated into local center applications.

c. To establish a file (database) that can be field tested and incorporated into a larger database such as the LitLine system and to create data files on the DEC VAX for dissemination.

MEC designed and developed a comprehensive system to assist adult educators to select, evaluate and use computer software in their adult literacy programs. The design and development of the proposed approach is based on the recognition that software evaluation needs to be guided by informal judgements against accepted evaluative criteria and documentation regarding actual applications of the software. Based on our previous experience in software, we know that the quality of use is enhanced by documentation of exemplary applications and opinions from adult educators.

Results

As part of this objective, a sub-committee (see attached) was established that encouraged development of a database file that would operate from an Apple computer. Planning meetings were held with the Advisory Committees (see Agenda, Appendix C).

The results of this effort, which are now ready for dissemination, are as follows:

ADVISORY SUB-COMMITTEE: SOFTWARE SELECTION

MEMBERS: Gloria Adomkaitis, Dorchester Adult Learning Center
Robert Aimo, Cambridge Learning Center
Ruth Derfler, SCALE
Robert Heon, OWL Learning Center
David Rosen, Roxbury Community College

PURPOSE: To provide software review capacity and dissemination of information on software reviews and listings statewide.

OBJECTIVES:

1. Increase the number of software reviews published yearly, including updates of new versions; review process.

2. Provide listings of courseware/software reviewed by Massachusetts educators as well as listings from other review sites, software reviews in journals, etc.

3. Integrate Minnesota MECC software within the Adult Education collection with new versions and new products given priority in 1988.

4. Determine which emerging technologies have appropriate "products" for review or promising "practices" (videodisc, etc.).

PROPOSED ACTIVITIES:

1. Work with software committee to conduct review process; update publication; prepare format for on-line loading and indexing.

2. Provide write-ups of software ratings for newsletters, UPDATE article, etc.

3. Disseminate copies of publications; provide on-line indexing and edits of software reviews.

4. Prepare "advertising" and dissemination materials for promising practices using software or other emerging technologies.

5. Sponsor/host two committee meetings where activities and priorities are reviewed; demonstrate software samples and annotated listings.

6. Load all software reviews on DEC Microvax II.

FACILITATORS: Richard J. Lavin, Merrimack Education Center
Neil Davidson, Springfield Regional Education Center

ADULT EDUCATION SOFTWARE REVIEWS DATA DISK

The Merrimack Education Center, in cooperation with the Massachusetts Department of Education Bureau of Student, Community, and Adult Services, has developed a computerized software reviews database as a service to adult educators applying computers in their instructional programs. The software reviews data disk provides useful information about readily available computer software programs which may have potential for use in adult education programs.

Objectives

The Adult Education Software Reviews Data Disk was designed to meet the needs of adult educators who are planning computer applications and selecting software for the instructional process. The format of the database and the information contained in the data files is designed to meet the following objectives:

- to provide information to assist in the selection of software appropriate for specific groups of adult learners;
- to provide a summary of subjective evaluations of software reviewed by adult educators who are sensitive to the criteria for selecting promising software;
- to provide convenient access to software product information to facilitate efficient curriculum planning.

Activities

MEC has been a leading support organization for working with schools and other public agencies in technology applications planning. Through its nationwide dissemination efforts, MEC has assisted more than one hundred and fifty school districts across the country in establishing long-range plans for technology integration. Steps in the planning process for implementing technology applications include the identification of available resources, the development of software selection criteria, hardware and software acquisition, and exploration of strategies for using technology with learners.

Concurrently since 1983, the Merrimack Education Center has worked closely with the MDE, Division of Student, Community and Adult Services, in a joint effort to support and improve adult basic education through the infusion of computer applications into on-going programs. Working with adult education projects statewide, the project explored the potential for computer use with their special populations. Over these years software reviews and experiences were gathered from local sites, and in 1986 were compiled into the publication Software Reviews for Adult Education. The guidebook has been offered to adult educators as a source of information about software which might be examined more closely for fulfilling a specific need with specific groups of learners. As Massachusetts reviewers have produced additional software reviews, this resource was expanded and is now in its third edition. The growth of the notebook format has inspired the development of this latest computer-based software reviews resource.

In 1988 the Software Selection Sub-Committee of the Adult Education Technology Advisory Group conducted meetings at Merrimack Education Center, during which specifications of the software database was discussed, a design format was created, and additional sources of software reviews were explored. Subsequently, additional review data collected by Annabelle Lavier in Oregon was combined with information condensed from the latest MEC guidebook to create this Adult Education Software Reviews Data Disk. It is the first in a series of disks designed to provide useful resources to educators in search of promising software.

Outcomes

The use of a computer disk for disseminating this information was selected to provide an efficient, low-cost means of distributing an extensive collection of data which can be manipulated with flexibility by a wide variety of users. The Adult Education Software Reviews Data Disk consists of files that work with the AppleWorks software program published by Apple Computer, Inc. To use these software reviews files

requires some familiarity with the word processing and database tools of the AppleWorks program, but because AppleWorks is so powerful and user-friendly, the new user can master essential skills quickly and easily. A pre-programmed, stand-alone program would do things that AppleWorks requires the user to do, however would be more limited, less flexible, and more expensive.

The data disk contains five files:

1. An Introduction -- Read Me First
2. Directions
3. Software Reviews
4. The Publisher Index
5. File Report Summary

Instructions for using the software reviews data are contained in word processing files: AN INTRODUCTION, DIRECTIONS, and REPORT FORMAT. These can be printed as a reference manual. The actual review data on approximately 300 programs is contained in the database file, SOFTWARE REVIEWS. THE PUBLISHER INDEX contains names, addresses and phone numbers for publishers listed.

Within the database each program is represented as a record which has ten categories of information. Records may be viewed in either single record layout, which shows all the categories of information for one record, or the multiple record layout, which shows selected categories of all the records of the file.

The record selection rules within AppleWorks database permit the user to pick particular records for printing/display and to ignore the rest. Up to three categories may be used for selection criteria and combined with Boolean operators and, or, etc. The user may also rearrange information alphabetically, numerically, or by date. Printer reports may be generated using four built-in report formats or by creating new reports.

As with any resource guide, a set of limitations should be carefully noted. Software products reviewed are generally compatible with the Apple II family of micorcomputers. Restrictions for use of programs with specific Apple II systems should be explored by potential purchasers. Secondly, we emphasize that the information contained in the database files has a degree of subjectivity that should be considered by the user. Reviews were submitted with a specific target audience in mind and should be examined in light of this perspective. To eliminate a product from potential use based upon this resource would be contrary to the intention of this resource staff. Finally, the reviews reflect a composite of individual experiences and should not in any case be viewed as either a group endorsement or condemnation of any given product. The content of the database records is not intended to reflect the opinion of Merrimack Education Center nor any branch of the State Department of Education.

Next Steps

This first software reviews data disk is also intended to test and elicit the reactions of adult educators. Their feedback will help us to determine the directions in which further development activities may take. We already see the potential benefits of taking the following next steps:

1. Make the database available in additional disk formats. These include PFS File for Apple II and file formats for popular programs on MS-DOS and MacIntosh microcomputers.

2. Include more in-depth information about programs currently reviewed. Additional information may include availability and cost of network versions, typical run-time, Dewey decimal reference, and more detailed evaluation data.

3. Refine the classification of programs for specific target groups to include reading level, pre-GED, and ABL categories.

4. Continue to add new reviews and reviews of new products.

RELATED PROGRAM ACTIVITIES

National Project (Penn State)

Merrimack Education Center serves on the Adult Literacy and Technology Steering Committee for the Penn State University project which is funded by the Gannett Foundation. In this role, MEC serves as a Massachusetts representative on the Steering Committee to guide activities and events for the national endeavors through this project. During this year MEC has had the opportunity to participate in the national conference held in Pittsburgh where a presentation was made on the Massachusetts state project. The Steering Committee has similar activities and events to Massachusetts and currently Massachusetts, because of the project emphasis of the past, is leading many of the activities and encouraging the dissemination and sharing between states. Major corporations are expressing interest in the adult literacy technology partnership and MEC is encouraging corporations, such as Apple, Digital and IBM, to assist endeavors through the Massachusetts project in improvements in the use of technology to enhance adult literacy efforts. The adult literacy and technology project is located at Penn State University, 248 Caldeway, Suite 307, University Park, Pennsylvania 16801.

MEC/Digital Project

Merrimack is currently working on a partnership project with Digital Equipment Corporation that includes the Massachusetts Department of Education Springfield Regional Center. In this project, efforts are underway to network and link superintendents through a superintendents workstation project. Currently in this project progress has been made on the use of electronic mail and the development of programs that enable central office staff, including executive secretaries, business managers, and assistant superintendents for curriculum, to share information between districts.

One area that is being explored by the adult education project is to utilize the Digital VAX computer to assist in the storage and distribution of information that might be included in the Apple network that has currently been established through the project. Originally planned was the development of a database file that would operate from the system and be disseminated statewide to increase awareness and use by adult ed sites. This system is currently being developed by an AppleWorks program and distributed for Apple computers which are readily available on a statewide basis. There are also efforts underway to establish a backup for this service through the Digital VAX computer system.

Journal Article

MEC was requested by the Technological Horizons of Education Journal (T.H.E.) to submit an article that would describe the use of computers as tools in reducing adult literacy. In this article, MEC has described the beneficial relationships between Malcolm Knowles' concept of andragogy and the use of computers at sites to assist adult students in the basic skills and some of the higher order skills of problem solving and thinking. The article emphasizes the integration of modern technology, especially computers, into adult literacy programs and describes the establishment of pilot projects to test out both the integration of technology in the curriculum and the networking concept. Copies of this journal article are attached to this report (Appendix D).

Apple Corporation

In a previous year's activity of the project, MEC developed a Computers in Adult Education Planning Guidebook. Recently this guidebook has been reviewed by the Apple Corporation, through their adult education technology division and has indicated a very favorable review and need for dissemination on a national basis. MEC has received interest by Apple in this effort and MEC has agreed to complete some rewriting and updating of the guidebook, especially as it relates to integrating

technology in curriculum and establishing networks and will complete this revision by the fall of 1988 for dissemination on a national basis. As part of this dissemination, MEC will make a number of copies of this guidebook available for general dissemination in Massachusetts through the Merrimack adult literacy technology project. Attached in Appendix E is a copy of the table of contents which is currently going through review for the new edition.

Dissemination Through Conferences/Newsletters

During the year the MEC project has made its staff and advisory boards available to a number of activities that are underway on a statewide basis. MEC currently contributes to the UPDATE Newsletter which is sponsored by the Adult and Community Education in Massachusetts to bring information on the project to as many statewide participants as possible. MEC has participated in a number of conferences on dissemination of the project and its capabilities through the New England Association of Adult Educators, the MAACE, conference presentations for the Literacy Volunteers of Massachusetts and is participating in the national conference being sponsored by the Penn State Adult Literacy Technology Project in Pittsburgh, Pennsylvania.

MEC also provides brochures and mailings that are distributed to a mailing list that is maintained at the Center that includes adult educators on a statewide basis. MEC also participates with the activities of the Massachusetts Department of Education through Robert Bickerton, Director of Bureau of Adult Education for the Department of Education. MEC also makes its services available to regional centers for conferences or activities that might be underway through the Massachusetts Department of Education's six regional offices. All activities of the project are coordinated with the regional center coordinators for adult education.

PROJECT BENEFITS

The computer undoubtedly has a role to play in adult education but it cannot do the job alone. The task of the project is to find appropriate uses for the computer and to help prepare adult education participants across the state, not just for jobs, but the prospect for life-long learning. The project through the years has provided benefits and has assumed a major role in the field of technology and adult education to address emerging needs:

- Technology is not being utilized at the level it might be at the instructional and administrative levels.
- There are limited resources at state and local levels and technology should be reviewed for increasing this capacity.
- Lack of training in computer utilization is evident and requires on-going support through facilitators statewide.
- Limited availability of software for adult literacy continues to be a problem and efforts need to continue in establishing best practices and disseminating these practices.
- There is a need to collect information and documentation of program results where technology is being used effectively within adult ed sites.

Each of these needs is being addressed by the project and support capacity continues to grow statewide as more and more adult educators become familiar with the technology and are comfortable in its use and as tools in their respective learning environments. Through the years of the project, a computer literacy training syllabus has been developed; core staff have been trained statewide, which now make up and comprise the Advisory Committee; software leadership has been expanded and represents in Massachusetts one of the largest and most accessible databases available; a network of trainers has been established statewide that enables local adult sites to receive services on an easy-to-call basis; information on the project is disseminated through newsletters and state conferences; pilot applications in networking have been established

in adult ed sites making use of Apple and appropriate adult ed software in CAI/CMI systems; administrative applications have been established in some of the larger urban adult ed sites for the purpose of attendance and enrollment data; recently some of these efforts have been expanded to smaller sites through a collaborative approach in the Worcester County area; field testing of applications in videodisc and other associated technologies has also been included in the project efforts; and finally, Massachusetts is now recognized as one of the leading states in the application of technology to adult literacy and is being recognized on a national basis by organizations, associations and corporations for their efforts.

In looking ahead, there is the need to build additional capacity in assisting adult educators in maximizing their use of technologies. The following are some recommendations for consideration by the Massachusetts Department of Education and agencies responsible for adult literacy programs.

RECOMMENDATIONS

- Technical assistance capacity needs to be expanded with trained technology facilitators in each of the six regions of the state.

- Knowledge of available software suitable for the adult learner needs to be expanded and resource descriptions disseminated.

- Adult education skill centers currently being piloted in two sites need to be expanded to a learning disability/adult literacy site.

- Successful adult literacy technology practices need to be collected and disseminated statewide.

- Skill center pilot applications need to be evaluated to determine potential gains in basic skills and higher order skills.

- More computers need to be made available to adult education sites statewide. (Availability continues to be sparse.)

- Technology applications need to be expanded and piloted in the GED testing and administrative process. (Recently MEC has secured applications software and scanning and test scoring systems available on a Digital VAX computer.)

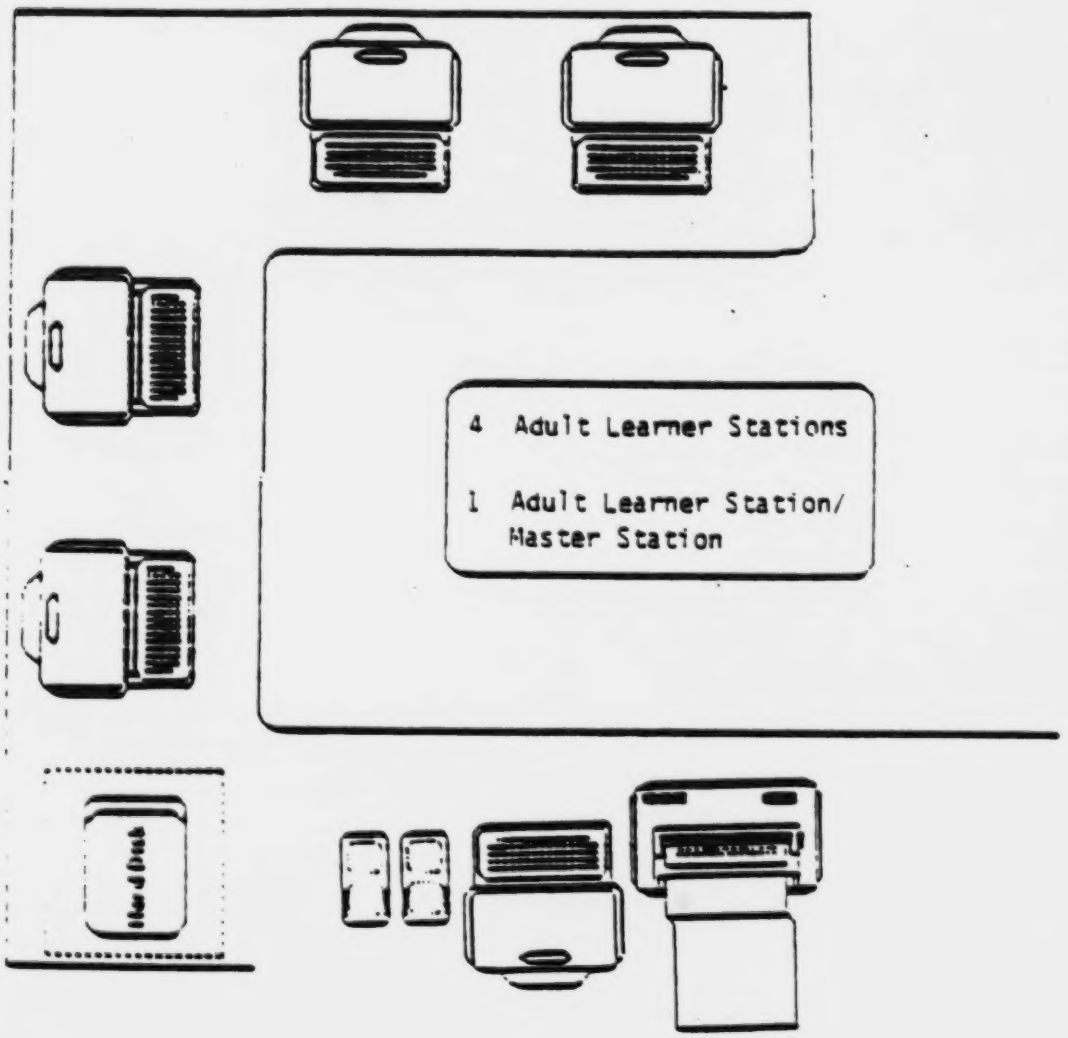
- A technology training assistance capacity should be targeted in the Boston Literacy Center and its related sites.

- A technology writing lab should be established in a site that is piloting the new GED writing process.

- New technologies, including videodisc, distance learning, and instructional support technologies, should be supported in pilot applications.

APPENDIX A

ADULT BASIC SKILLS CENTER CONFIGURATION



Equipment

- Apple II Plus or II E
- Corvus Network
- printers
- interfaces, cables

APPENDIX B

Consultants help educators use computers

Six technology consultants are available through the Adult Education and Technology Project at the Merrimack Education Center (MEC), Chelmsford, to help adult educators adapt computer technology and expertise to their sites.

Consultants will help adult educators learn about the capabilities of technology, increase their technical skills and explore innovative ideas and materials.

The six consultants all serve on the advisory committee for the Technology Project. They are:

- Jean Ford, Boston Technical Center, Boston
- Russ Hayes, Worcester County House of Correction, West Boylston
- Ann Marston, Hampden County House of Correction, Springfield
- Jim McCarthy, Cardinal Cushing Center, Boston
- Kathleen Stewart, Lawrence Adult Learning Center, Lawrence, and
- Ken Tamarkin, the SCALE Program, Somerville.

For further information or to request assistance or a demonstration, call Jean Sanders or Dick Lavin at the Merrimack Education Center, 101 Mill Road, Chelmsford, Mass. 01824. Tel.: (617) 256-3985.

Update

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Editorial Board – Adult Education: Pauline Kightlinger, Marian Maroney, Christy Newman, Barbara Smiowski. Community Education: Barbara Aschheim

Editor: Bernadine Cassell

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APPENDIX C

MERRIMACK EDUCATION CENTER
ADULT LITERACY/TECHNOLOGY PROJECT

SOFTWARE ADVISORY GROUP MEETING
MAY 2, 1988

A G E N D A

I. Review of Software Database (AppleWorks)

   A. Format

   B. Next Steps

II. National Project/Software Review (Apple)

   A. Role of Advisory Group

   B. Massachusetts Database/Linking

   C. Next Steps/Timelines

III. Networking (Two Models)/Demonstration

   A. Corvus Apple Network

   B. MEC/DEC Network

IV. On-Line Software Reviews

   (Discussions - Next Year's Proposal)

V. Other Items

APPENDIX D

T · H · E
TECHNOLOGICAL HORIZONS IN EDUCATION
JOURNAL
Vol. 15, No. 10, June 1988

Using Computers as Tools For Reducing Adult Illiteracy

by RICHARD J. LAVIN, Executive Director
and JEAN E. SANDERS, Senior Associate Director
Merrimack Education Center, Chelmsford, Mass.

There is more adult illiteracy in the United States today than ever before. The number of illiterate adults now equals our total population in U.S. secondary schools. Harris polls and other national surveys indicate that an estimated 50 million adults are illiterate and another 39 million read with considerable difficulty.

Recognizing that people are our country's most precious resource for the future, government and private industry are beginning to devote more attention to adult education. Beginning in 1983, the federal government established the National Literacy Initiative, the National Adult Literacy Project and the Coalition for Literacy. Private industry formed the Business Council for Effective Literacy (BCEL) and the Gannett Foundation began providing support for a national adult literacy/technology program. The Adult Basic Education (ABE) program is the nation's single largest literacy project today, with an enrollment of 3.1 million people in 1986, up from 2.5 million in 1984.

Many states have implemented their own projects, such as the Commonwealth Literacy Corps established in Massachusetts in 1987. In addition, the Massachusetts Department of Education (MDE) and the Merrimack Education Center (MEC) are working on a series of Adult Literacy Programs, including MEC's Lighthouse/Technology Project.

However, despite all these efforts, resources continue to be less than adequate in meeting the challenge of widespread adult illiteracy. In Massachusetts, adult education programs serve only 3 percent of those adults who have not completed high school. Only 32,500 out of 1.3 million adults who qualify for ABE are being served by these programs.

There is approximately one teacher for every 50 students.

Many factors contribute to current difficulties with adult literacy projects. Characteristic problems include the following:

- Most potential adult learners have critical issues affecting their lives, including economic deprivation, learning disabilities, family crises and unemployment or under-employment.
- Adult learners have many demands upon their time, so finding time for study is often difficult.
- Many adults refuse to acknowledge their illiteracy and therefore don't seek help due to fear of being shamed or exposed.
- Many adult students have fears and insecurities about learning as a direct result of past learning experiences. They often believe they are incapable of learning.
- There is approximately one teacher for every 50 students in the current service delivery system.
- Four out of five teachers are part-time. Although most of these are certified, many are not trained in working with adult populations.
- Most learning centers operate with a system of individualized educational plans for each student. Students work independently, and there is little or no peer support.

These problems indicate that it's time to take a new look at adult learning programs if we are to reach more students and help those we do reach to succeed. However, studies suggest that we need to do more than simply provide additional financing or more programs. We need to examine new methods to improve adult education.

One powerful new method is the integration of modern technology, especially computers. If we integrate technology successfully into adult literacy programs, we can simultaneously teach marketable skills.

Redefining Adult Learning Requirements

Adult illiterates used to be defined as people who couldn't achieve at least a fourth-grade reading level. In today's technological age, most experts agree that the minimum standard should be at least a 12th-grade reading level. However, teaching reading skills is no longer enough; we must explore new methods of employing technology to teach thinking skills. For, as the general population becomes more technologically oriented, the learning gap broadens. Today's adult learning programs must provide a variety of communication skills, including computer literacy, to enable adults to participate fully in modern society.

1 Kozma, Nicholas J. Andrusyn, et al. [illegible] San Francisco CA: Jossey-Bass, Inc., 1986.

2 Technology Applications for Transforming Adult Learning and Learners. Keynote address by Dr. Charles Wedemeyer at the Massachusetts Annual Conference on Adult Basic Education: A Technology Update, sponsored by the Massachusetts Department of Education and the Merrimack Education Center, May 19, 1987.

3 [illegible] to Adult Education: A Planning Guide. Chelmsford, MA: Merrimack Education Center.

APPENDIX E

COMPUTERS IN ADULT EDUCATION PLANNING GUIDEBOOK
TABLE OF CONTENTS

	Page
Chapter I - Preliminary Planning Activities	1
Introduction	1
Form Your Own Vision	3
Organize a Planning Group	7
Conduct Staff Awareness Activities	7
Identify Planning Resources	9
Chapter II - Planning Computer Applications	10
Match Applications to Program Needs	11
Classify Instructional Applications	13
Select Software	15
Chapter III - Hardware Considerations	21
Explore System Features	21
Hardware Selection Process	25
Chapter IV - Planning for Implementation	32
Estimate Staff Training Requirements	32
Design Staff Development Activities	34
Organize an Application Support System	39
Design a System for Monitoring and Evaluation	41
Looking Ahead	39
Appendices	
Appendix A - Resource	
Appendix B - Software Especially Useful for Adult Education Applications	
Appendix C - Software Evaluation Form Software Review Guide Order Blank	

APPENDIX F

MEC CAPABILITY STATEMENT

In cooperation with the MDE, Bureau of Adult Education, MEC offers the following services: computer applications training, operation of an extensive software preview center, specialized software selection, technical assistance in the design and installation of administrative database. Richard J. Lavin is the founder of MEC, which is one of the largest educational service centers in New England. He has conducted many projects at the local, state and federal levels of education and consults with business and industry on educational applications using technology. Lavin directed the pilot test component of the design contract to develop a national educational practices file for the National Institute of Education.

Role of Organization in Technology Applications

As a non-profit organization, MEC has worked with the state adult educators to assist in designing and implementing a comprehensive process for the application of technology. We work cooperatively at establishing statewide initiatives as they relate to the integration of technology into the instructional and administrative areas of adult education.

Support services maintained by MEC include: computer planning, use of computers in curriculum and instruction, installation of hardware and selection of software. MEC staff are trained to develop model computer applications in all administrative and instructional areas. Project staff have participated and have background and experience in the estalbishment of a national practice file developed through the U. S. Department of Education. MEC has participated in national conferences of the Gannett technology program in Minnesota and serves on the Advisory Board of the Gannett Foundation awarded project at the University of Pennsylvania.

MEC has operated as a Lighthouse Technology Center and will be continuing as a Lighthouse project working cooperatively with Digital Equipment Corporation in the next school year. MEC maintains a large software distribution component and has developed an interactive videodisc capacity that provides a ready, up-to-date list of available resources for technology. We have the expertise and resources to bring together the network members, instructors from local adult learning centers, and to offer "professional growth and development" opportunities. We are knowledgeable in building statewide professional development systems for technology applications.